

How One Massachusetts Grocer is Converting Food Waste to Energy

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A Quincy, Mass.-based grocery store is using anaerobic digestion to convert food waste into energy. Stop & Shop has partnered with a local technology company to open an anaerobic digestion facility in the state.

Officially launched on April 15, the facility converts the food waste from all 212 Stop & Shop New England stores to generate energy used to power its 1.1 million-sq. ft. Freetown (Mass.) Distribution Center. Stop & Shop worked with Divert Inc. to construct the plant.

"It recreates the natural process of anaerobic digestion, a process in which microorganisms break down biodegradable material, to convert the carbon in edible food into a natural biogas, a clean, renewable and local energy source that can be used to generate electricity," says Philip Tracey, Stop & Shop manager of public relations. "The process is carried out in an enclosed, oxygen-free environment, which means it generates no odors."

The Stop & Shop Green Energy Facility is expected to process an average of 95 tons of inedible food per day, an estimated 34,000 tons per year. The energy produced by the 12,000-sq.-ft. facility will provide up to 40 percent of the Freetown distribution center's energy needs. That's enough power to operate the facility for four months out of the year. Once fully operational, the facility will create approximately 1.25 megawatts of clean electricity.

"The food waste used to power the facility is made up of products that go unsold and are unable to be donated to regional food banks or local farms," says Tracey. "Once onsite, the inedible food material is turned into usable energy within 24 hours."

The Green Energy Facility was created and is operated by Divert. A \$400,000 grant was provided by the Massachusetts Clean Energy Center for the creation of the facility. Additionally, Stop & Shop received funding from Eversource Energy, New England's largest energy provider.

"We are always looking for innovative ways to lessen our impact on the environment, specifically reducing the amount of food waste which would otherwise end up in a landfill," says Tracey. "We have a goal of achieving zero waste by 2020 and the launch of the Green Energy Facility is just one example of our ongoing efforts to be greener in our operations."

While most existing digestion systems process material that is already liquid and has zero contamination or packaging, this system utilizes digestion and liquefaction technology to process packaged organics. It also reduces space requirements, generates more energy and produces a cleaner effluent than other facilities. The effluent can be disposed of in the sanitary sewer, Tracey says.

“The system allows Stop & Shop to vertically integrate our business to by allowing trucks return inedible food to Freetown on their regular trips, reducing diesel truck traffic, helps Stop & Shop save money, and lessens our environmental impacts,” he says. “We are turning the unsold, inedible products into energy in less than 24 hours.”

Supermarket organics represent a unique challenge as unsold and un-donated grocery store food contains lots of unwanted wrappers, plastics, containers and other materials.

“The technology we use has been specifically designed to handle all unsold food, including a high percentage of packaged organics -- everything from yogurt containers to egg cartons to onion bags. This simplifies the process and maximizes energy generated,” says Tracey.

Ahold USA, Stop & Shop’s parent company and its retail divisions have goals to reduce its carbon footprint by 20 percent and to achieve zero waste company-wide by 2020.

“The Stop & Shop Green Energy Facility is a perfect example of our ongoing efforts to be greener in our operations,” said Marissa Nelson, senior vice president of responsible retailing and healthy living for Ahold USA, in a statement.

